Claims

We claim:

1   1.   A system for receiving audio input comprising:

2   a display for displaying electronic information;

3   an audio input receiving audio content; and,

4   a processor for associating said received audio content with said displayed electronic

5   information.

1   2.   The system according to claim 1, wherein said audio content is in the form of

2   audio clips.

1   3.   The system according to claim 1, said processor further associating at least one

2   property with said audio content and wherein said audio content is randomly accessible based on

3   said at least one property.

1   4.   The system according to claim 3, further comprising:

2   a storage for storing said audio content with said at least one property.

1   5.   The system according to claim 1, further comprising:

2   an input receiving a user's input,

3   wherein said processor starts recording audio content from said audio input in response to

4   said user's input.

1   6.   The system according to claim 1, wherein said processor includes a voice

2   activated recording system for recording said audio content.

1   7.   The system according to claim 6, wherein said voice activated recording system

2   records when said audio content exceeds a predetermined threshold.

1   8.   The system according to claim 6, wherein said voice activated recording system

2   records when a known user's voice is detected in said audio content.

1   9.   The system according to claim 1, wherein said processor controls said display to

2   indicate that audio content is associated with said displayed electronic information.

1   10.   A system for playing audio content, said system comprising:

2   a display for displaying electronic information;

3   a storage for storing audio content, said audio content including properties and having

4   been associated with said displayed electronic information;

5   an output for outputting at least some of said audio content with navigation of said

6   displayed electronic information; and

7   a processor for controlling said display, said storage and said output.

1   11.   The system according to claim 10, wherein said audio content are audio clips.

1   12.   The system according to claim 10, wherein said audio content is randomly

2   addressable based on said properties.

1   13.   The system according to claim 12, wherein said storage is a database.

1   14.   The system according to claim 10, further comprising:

2   an input for receiving a user's input,

3   wherein said output outputs at least some of said audio content in response to receiving

4   said user's input.

1   15.   The system according to claim 10, further comprising:

2   an input for receiving a user's input,

3   wherein said processor searches properties of said stored audio content in response to

4   said user's input.

1   16.   The system according to claim 15, wherein the output of said processor is sent to

2   said display to display an indication of the search results.

1   17.   The system according to claim 15, wherein the output of said controller is sent to

2   the output for playing audio content with properties matching the search results.

1   18.   The system according to claim 10, wherein said processor retrieves all audio

2   content associated with said electronic information when said electronic information is accessed.

1   19.   The system according to claim 10, wherein said processor outputs selected audio

2   content to be played through said output when a page of said electronic information is displayed.

1   20.   The system according to claim 19, wherein said processor automatically plays

2   said selected audio content when said page is displayed.

1   21.   The system according to claim 10, further comprising:

2   a communication link to transmit said audio content with its properties.

1   22.   The system according to claim 21, further comprising:

2   a network connected to said communication link for receiving said audio content with

3   properties, said network being accessible by other users.

1   23.   The system according to claim 21, further comprising:

2   a receiving device of another user for receiving said audio content with properties, said

3   receiving device receiving said audio content through one of a wired or wireless interface.

1   24.   The system according to claim 22, wherein said network further processes said

2   audio content.

1   25.   The system according to claim 22, wherein said network includes a database for

2   storing said audio content.

1   26.   The system according to claim 22, wherein said network receives audio content

2 without receiving said electronic information associated with said audio content.

1   27.   A user interface for displaying electronic information to a user comprising:

2   a first display portion for displaying a portion of a document; and

3   a second display portion for displaying a graphical indication that said document includes

4 an audio annotation associated with said displayed portion of said document.

1   28.   The user interface according to claim 27, further comprising:

2   a third display portion for displaying a non-audio annotation.

1   29.   The user interface according to claim 27, further comprising:

2   a third display portion for displaying an indication that said audio annotation is being

3 recorded or played back.

1   30.   The user interface according to claim 27, further comprising:

2   a third display portion for displaying one of a document tape or a master tape.

1   31.   The user interface according to claim 27, further comprising:

2   a third display portion for receiving a user input of a property or properties of said audio

3 annotation.

1   32.   The user interface according to claim 27, wherein said audio annotation is

2 recordable by said user.

1   33.   A process for recording an audio annotation comprising the steps of:

2   displaying electronic information;

3   receiving a user input;

4   recording an audio annotation in response to said user input; and

5   associating said audio annotation with properties including a displayed portion of said

6   electronic information.

1   34.   The process according to claim 33, further comprising the step of:

2   storing said audio annotation prior to the association of said audio annotation with said

3   displayed portion.

1   35.   The process according to claim 33, further comprising the step of:

2   storing said audio annotation after the association of said audio annotation with said

3   displayed portion.

1   36.   The process according to claim 33, wherein said recording step records all

2   ambient sounds.

1   37.   The process according to claim 33, wherein said recording step records only

2   sounds above a predetermined threshold.

1   38.   The process according to claim 37, wherein said recording step records only a

2   specific user's voice.

1   39.   The process according to claim 33, further comprising the step of:

2   associating additional properties with said audio annotation at the start of recording of

3   said audio annotation.

1   40.   The process according to claim 33, wherein one of said properties is a file

2   position or document position of an item on said displayed portion of said electronic information.

1   41.   The process according to claim 33, wherein one of said properties is a start

2   identification of said displayed portion of said electronic information.

1   42.   The process according to claim 33, further comprising the steps of:

2   storing said audio annotation; and,

3   searching audio annotations including said audio annotation for at least one property

4   matching a query.

1   43.   A process for playing audio annotations comprising the steps of:

2   displaying a portion of electronic information;

3   receiving a user input;

4   retrieving audio annotations;

5   assembling said audio annotations into an audio stream; and

6   playing said audio stream.

1   44.   The process according to claim 43, further comprising the step of:

2   waiting for a second user input prior to playing said audio stream.

1   45.   The process according to claim 43, further comprising the step of:

2   playing once said audio stream is assembled.

1   46.   The process according to claim 43, wherein said user input is a text query.

1   47.   The process according to claim 43, wherein said user input is a voice query.

1   48.   The process according to claim 43, further comprising the steps of:

2   altering the display of said portion to match a currently playing annotation in said audio

3   stream.

1   49.   The process according to claim 48, wherein said altering step includes the steps

2   of:

3   comparing the length of said currently playing annotation with the starting identifications

4   of displayable portions of said electronic information; and

5   displaying the portion of said electronic information supporting the greater length of said

6   currently playing annotation.

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1   50.   A process for playing audio annotations comprising the steps of:

2   navigating to a page;

3   retrieving at least one audio annotation associated with a page or associated with an item

4   on a page; and

5   playing said at least one audio annotation.

1   51.   The process according to claim 50, further comprising the step of:

2   waiting for a user input prior to playing said audio annotation.

1   52.   The process according to claim 50, wherein said item on said page includes at

2   least one of embedded notes, inked notes, highlights and underlining.

1   53.   The process according to claim 50, wherein said at least one audio annotation was

2   previously retrieved and said retrieving step includes indexing said previously retrieved at least

3   one audio annotation.

1   54.   The process according to claim 50, wherein said at least one audio annotation is

2   the result of a newly executed query.

1   55.   A computer readable medium having a data structure stored thereon, said data

2   structure comprising:

3   a document;

4   a link object; and

5   audio content with at least one property,

6   wherein said link object references said document and references said audio content.

1   56.   The data structure according to claim 55, wherein said property relates to the time

2   said audio content started recording.

1   57.   The data structure according to claim 55, wherein said property relates to the time

2   said audio content stopped recording.

1   58.   The data structure according to claim 55, wherein said property relates to the

2   length of recording of said audio content.

1   59.   The data structure according to claim 55, wherein said property relates to the

2   author of the recording.

1   60.   The data structure according to claim 55, wherein said property relates to the start

2   ID.

1   61.   The data structure according to claim 55, wherein said property relates to the stop

2   ID.

1   62.   The data structure according to claim 55, wherein said audio content is comprised

2   of a plurality of audio clips.

1   63.   The data structure according to claim 62, wherein said audio clips are stored in a

2   database.

1   64.   The data structure according to claim 55, wherein said property is one of plurality

2   of properties and said properties are in a marked up language form.

1   65.   The data structure according to claim 64, wherein said properties are in XML.

1   66.   The data structure according to claim 55, wherein said audio content is stored

2   within a document.

1   67.   The data structure according to claim 55, wherein said audio content is stored

2   apart from a document.

1   68.   The data structure according to claim 67, wherein said audio content is stored in a

2   database with at least one property designating the position of viewed document relating to said

3   audio content.

1   69.   The data structure according to claim 67, wherein said audio content is stored in a

2   database and linked to a separate annotation document that stores the position of a viewed

3   document relating to said audio content.

1   70.   A process for recording audio content comprising the steps of:

2   navigating to a page of a document;

3   recording said audio content; and

4   associating properties with said audio content such that retrieval of said audio content

5   positions said audio content after previously recorded audio content.

1   71.   The process according to claim 70, wherein said audio content comprises audio

2   clips and wherein said associating step includes a time property.

1   72.   The process according to claim 71, wherein said audio content and said

2   previously recorded audio content is ordered at least by said time property.

1   73.   A process of searching audio clips comprising the steps of:

2   inputting search terms or properties;

3   searching said audio clips for said search terms or properties; and

4   ordering audio clips detected by said searching step for output.

1   74.   The process according to claim 73, wherein said inputting step further comprises

2   the steps of:

3   receiving verbally delimited keywords; and

4   converting said verbally delimited keywords into search terms or properties.

1   75.   A process for recording audio information comprising the steps of:

2   recording audio signals as a first file;

3   processing said file to extract audio clips; and

4   storing said audio clips,

5   wherein said processing separates the content of said first file into audio clips based on

6   events.

1   76.   The process for recording according to claim 75,

2   wherein said audio signals include speech, and

3   wherein said events comprise at least one of short pauses in said speech, a pause of a

4   predetermined length, and a user navigating away from a displayed page.

1   77.   A process for associating audio notes and handwritten notes comprising the steps

2   of:

3   creating a handwritten note;

4   associating a time at which said handwritten note was created with said handwritten note;

5   creating an audio note; and

6   associating a time at which said audio note was created with said audio note,

7   wherein, upon selection of said handwritten note, audio notes recorded at or near the time

8   at which said handwritten note was created are located.

1   78.   The process according to claim 77, wherein locating said audio notes includes the

2   step of querying a database for audio clips.

1   79.   The process according to claim 77, wherein locating said audio notes includes the

2   step of searching a table.

1   80.   The process according to claim 77, wherein locating said audio notes includes the

2   step of searching a linked list.

1   81.   The process of claim 77, wherein said audio notes are comprised of audio clips in

2   which each audio clip has a time of creation associated with each audio clip.

1   82.   The process according to claim 77, further comprising the step of:

2   playing said audio notes.

1   83.   A process for playing audio notes comprising the steps of:

2   displaying a first page of electronic information;

3   playing audio notes associated with said first page;

4   displaying a second page of electronic information; and,

5   playing audio notes associated with said second page.

1   84.   The process according to claim 83, further comprising the step of receiving user

2   input,

3   wherein, in response to said user input, said second page is displayed.

1   85.   A process of recording audio notes comprising the steps of:

2   displaying a first page of electronic information;

3   recording a first set of audio notes;

4   associating said first set of audio notes with said first page;

5   displaying a second page of electronic information;

6   recording a second set of audio notes; and

7   associating said second set of audio notes with said second page.

1   86.   The process according to claim 85, further comprising the step of receiving user

2   input,

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3   wherein, in response to said user input, said second page is displayed.

1   87.   A process for editing audio notes comprising the steps of:

2   querying a database for audio information;

3   ordering said audio information into audio notes; and

4   performing editing features on said audio notes.

1   88.   The process for editing audio notes according to claim 87, wherein said editing

2 comprises at least one of the steps of:

3   adding audio information;

4   deleting audio information; and

5   overwriting existing audio information.